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*Published in:*
Proceedings of Media Education Summitt 2020

*Publication date:*
2020

*Document Version*
Other version

# De-constructing Media-fueled Conceptions on Artificial Intelligence by Playing “Who’s who?”

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**Keywords :**

Artificial Intelligence Literacy, Digital Media Literacy, Critical Technology Education, Interdisciplinary

Artificial intelligence (AI) is becoming increasingly prominent in our media environment (e.g. search engines, chatbots, home assistants, recommender systems). However, public knowledge about AI is limited and conceptions are biased. These conceptions are often media-fueled and oscillate between threats and phantasms. AI is generally regarded by the public as robots with more capabilities than they actually have. Some Occidental governments have recently shown interest to initiate AI education with young children. Still, there are few pedagogical resources for schools (Eaton, 2018 ; Gadanidis, 2017 ; Heinze, 2010), and they emphasize technical skills. AI education challenges also hold an ethical and societal perspective, thus needing an interdisciplinary and critical approach (Saariketo, 2014 ; Henry et al., 2018).

Our research aims to develop an educational activity for 10-14-year old children focusing on AI core concepts and questioning its intelligence with an approach involving both media and computer science education. Children are invited to engage in a role-playing game inspired by AI media-fueled conceptions (e.g. science-fiction, futuristic predictions) through which they discover the core concepts of machine learning. Beyond their initial

conceptions, which they realize are largely media-fueled, they understand that an AI is the result of design choices and that it only works within a context defined beforehand.

The project was implemented following a design-based approach (The Design-Based Research Collective, 2003; Wang & Hannafin, 2005) in several iterative phases. The first phase confronted teachers with the initial version of the game. A version with major revisions was then tested in a dozen classes. Observations, questionnaires completed by children and semi-directive interviews with teachers show the importance of integrating technical and critical approaches to address the issue of AI conceptions and the difficulties teachers face when conducting such an activity. Grounded on the in-class session results and on continuous feedback received from prospect teachers, a new version of the activity was developed.

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Anne-Sophie Collard is professor in information and communication sciences at the University of Namur. Her researches are focused on digital and media literacies, critical technology education and collaborative practices in digital work environments.

Julie Henry is PhD student and research assistant in computer science at the University of Namur. Her researches are focused on computer science education, programming novice's mental models, AI and digital literacies.

Alyson Hernalesteen is a research assistant at the University of Namur. In the framework of the government project called "pacte d'excellence numérique", she is working on the integration of technologies in education. Her researches also focus on media literacy.

Jerry Jacques is a postdoctoral researcher at Université de Namur and guest lecturer at Université catholique de Louvain. He is interested by contemporary literacies needed to interact and make sense of media and information.

Benoit Frénay is professor in computer science at the University of Namur. His research focuses on safe and human-centered machine learning. He is involved in AI outreach activities and supervises a data science study program.